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STATUS REPORT

URANIUM DEVELOPMENT ON FEDERAL AND INDIAN LANDS NORTHWEST NEW MEXICO AREA

Prepared by

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Background

At the present time, approximately 8 to 9 percent of this country's electricity is supplied by 55 operating nuclear powerplants. Construction permits have been issued for 63 additional plants with 103 plants on order and 16 plants firmly planned for a total of 237 plants with commitments. Present projections estimate that by the year 2000, there will exist 725 nuclear powerplants which will supply approximately 50 percent of this nation's electrical power. If this developmental scheme is to be realized, there will have to be a concurrent increase in the mining and milling of uranium ore.

The price of uranium oxide (yellowcake) has recently risen from $7.00-$8.00 per pound to $40.00 per pound for immediate delivery. Future bid prices stand at $51.45 per pound for July 1980. Most estimates are that the price will go higher.

In 1974, New Mexico accounted for about 43 percent of the total United States (US) domestic production of uranium oxide. This production is from the area known as the Grants Uranium Belt which is an area 100 miles long by 20 miles wide north of Interstate Highway 40 and stretching from the Gallup Sag to the Rio Puerco. (See Map A.) It is the most important uranium-producing district in the US, estimated to contain one-half of the nation's uranium ore. Presently in this area, there are about 30 uranium ore mines operated by 10 different companies and 3 uranium concentrate mills each operated by a different company.

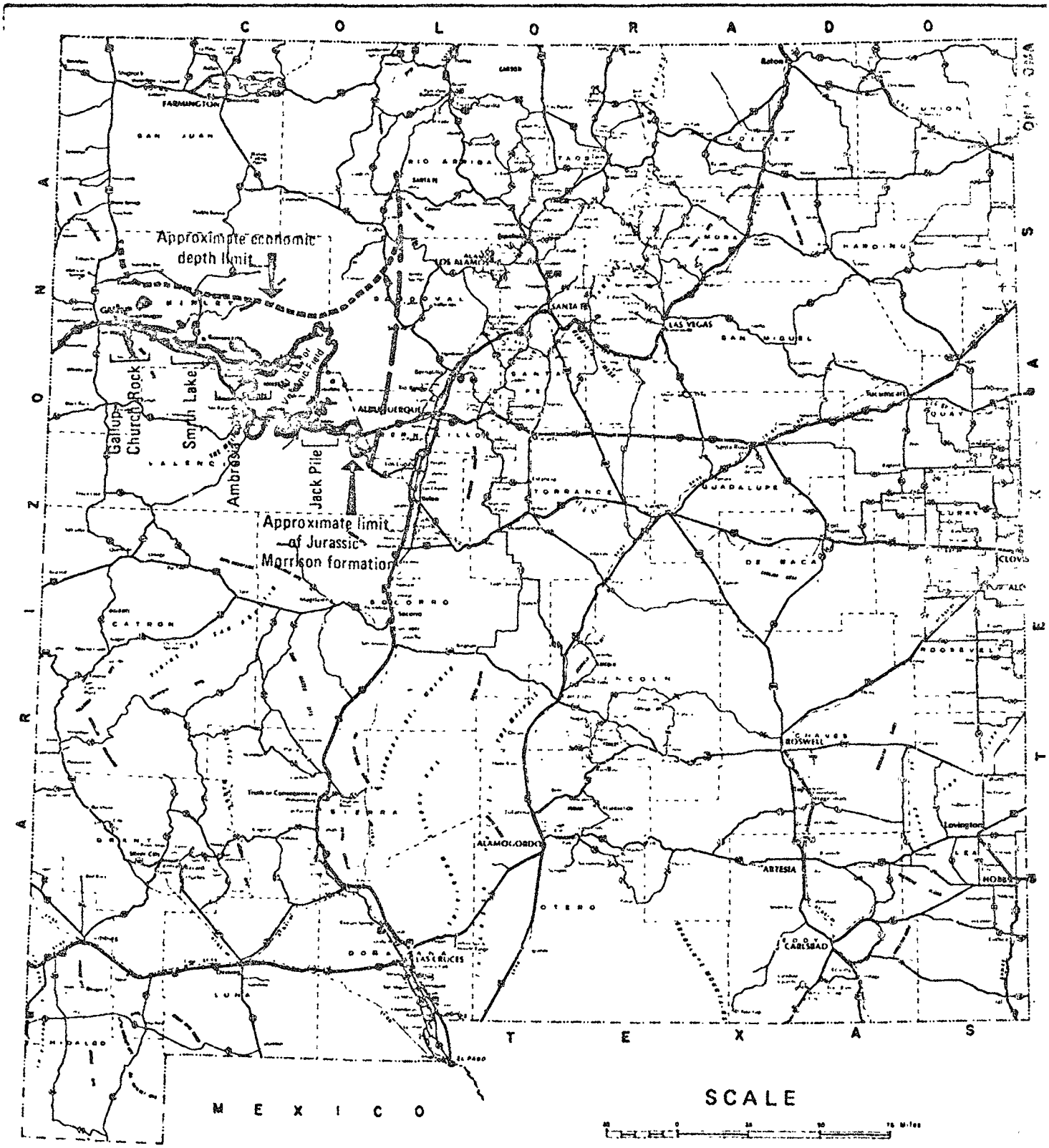
The land in the Grants Uranium Belt includes Navajo Reservation, Navajo allotted lands, Laguna Pueblo, Acoma Pueblo, Canoncito Band Navajo, Jemez Pueblo, Zia Pueblo, Bureau of Land Management (BLM), Forest Service, state, and private lands. It is estimated that about one-half of the lands in this identified area are under the jurisdiction of the Department of the Interior and most of it is Indian land. A considerable portion of this land is located in the "checkerboard" area in which there is an intermixture of Navajo Tribal Trust, Navajo allotted, state, BLM, other government, and private ownerships.

In 1974, New Mexico produced about 3,000,000 tons of uranium ore and 5,000 tons of uranium concentrate. It has been estimated that about 40-45 percent of this present production is from Indian lands. The Anaconda open-pit Jackpile Mine located on Laguna Pueblo land accounts for a considerable portion of this present production. However, it is expected that this percentage of production from Indian lands will decrease in the future.

New Mexico ranks high in reserves with a U_3O_8 content per ton of uranium ore which is considerably higher than the average of other states. Recent estimates by various state agencies, trade groups, and the University of New Mexico project that the uranium industry in New Mexico will increase dramatically. The uranium industry employed about 2,900 persons in the state in 1974. According to some estimates, the work force is expected to increase up to 20,000-30,000 persons by 1990. The three uranium mills

in the state produce about 5,000 tons of concentrate each year. Expansion being planned could raise that to 35,000-50,000 tons in 10 years according to some estimates. The Grants Uranium Belt is considered by industry as the most favorable prospective area for uranium in the United States.

[redacted]NEW MEXICO URANIUM R[redacted]URCES



Grants Uranium Belt
Known Ore Deposits

SOURCE: New Mexico Geological Society Guidebook, 18th Field Conference

MAP A

Description of Uranium Mining Activity in New Mexico

The uranium mineralization of the Grants Uranium Belt occurs in the Jurassic sandstones and limestones that lie on the surface or near the surface. Present surface mining occurs primarily in the Jackpile area (Laguna Pueblo area) while subsurface mining, with shafts up to 3,000 feet deep, occurs in most other areas.

The typical mine generally consists of a vertical shaft which provides access to the ore and which is used to haul men, equipment, supplies, ore, and waste rock. Additional shafts or large diameter drill holes are used for air intake and exhaust. From the bottom of the main shaft, haulage drifts and raises are driven, as necessary, to provide access to the ore. About 15-20 acres of land is generally required for surface facilities, access roads, tailings area, ore storage, and water treatment ponds for each mine.

Ground water is encountered in almost all of the deep mines. The quantity of ground water encountered varies depending on the aquifer or aquifers penetrated. Usually the water is collected at the bottom of the shaft in a sump and then pumped to the surface. In cases of excessive water quantity, shafts may have to be pressure-grouted and lined. In some cases, wells are drilled around the shaft or the mine workings in order to reduce the influx of water.

De-watering rates of each mine generally range from 750 to 2,000 gpm. Some of the large deeper mines proposed or under construction are expected to have larger de-watering rates up to 4,000-6,000 gpm.

Mined ore is generally stored in an area on the surface adjacent to the mine shaft until trucked to a mill for processing.

Each mine generally employs between 150-200 miners and produces about 1,000-1,500 tons of ore per day.

Previous Department Actions Related to Uranium Development in Northwest New Mexico

There are approximately 284,600 acres of Indian tribal and Indian allotted lands presently leased for uranium exploration and development in Northwest New Mexico. Of this acreage, about 270,300 acres are located on Navajo tribal and allotted lands and 14,300 acres are located on Laguna Pueblo lands. (See Map B.) The existing lease acreage located on Navajo tribal and allotted lands represents the remaining acreage of lands that have been leased over a period of several years. The dates of these sales, the number of leases, and present acreages is included on page 7. An additional 400,000 acres (625 square miles) on the Navajo Reservation is awaiting Department approval for lease to Exxon. An Environmental Impact Statement (EIS) is now being prepared by the Bureau of Indian Affairs (BIA) on this proposed lease.

Thirteen separate companies account for all lands presently leased on Navajo tribal and allotted lands and on the Laguna Pueblo lands. These are Anaconda, Continental Oil, Grace, Gulf Minerals, Homestake, Humble Oil, Hydro Nuclear, Kerr-McGee, Mobil Oil, Pioneer Nuclear, United Nuclear, Western Nuclear, and Phillips.

On the Navajo tribal and allotted lands, there are about 232,300 acres covered by existing exploration permits and 11,300 acres covered by mining plans. Approximately 26,700 acres have had no exploration permits issued yet. (See Map B.) (Note: The above figures exclude the Navajo-Exxon lease area.) For the land presently covered by exploration permits, several thousand exploration holes have been drilled to date. For FY 1975 about 1,000 holes were drilled on Indian lands, which included 1,800,000 feet drilled. One mine, Kerr McGee's Church Rock I Mine, is presently in operation. The mining plans for Kerr McGee's Church Rock II Mine and Church Rock III Mine located on the Navajo Reservation in close proximity to Church Rock I Mine have recently been approved. The mining plan for Gulf Mineral Resources Mariano Lake Mine has also been approved. Development of these three mines is expected to start shortly. (See Map C.)

On Laguna tribal lands, there are 7,550 acres of land covered by mining permits and 6,750 acres covered by exploration plans. (See Map B.) Active mining is taking place at Anaconda's Jackpile Mine site where two underground mining operations and the largest uranium strip mine operation in the world exists. There are mining plans pending for Anaconda's new P-15 and P-17 mines which will be underground mining operations. (See Map C.)

While there is much uranium exploration activity on National Resource Lands, that activity has been primarily regulated under the provisions of the 1872 mining law which classes uranium as "locatable mineral" and restricts BLM's role to the approval of patents for mining claims. Neither BLM nor Geological Survey (GS) oversees prospecting, exploration, or development of uranium activities on these public lands. At this time.

no one knows how many mining claims may have been filed on federally-owned uranium lands. However, in the case of acquired lands, BLM has issued two leases for uranium development (600 acres) and eight prospecting permits (13,700 acres).

In addition, on both Indian and federal lands, a number of surface right-of-way approvals have been given for support facilities such as roads; power, water, and gas lines, etc. The exact number related to uranium development is not known.

The following Table I includes a listing of the previous Departmental actions related to uranium development in the Northwest New Mexico area.

TABLE I

PREVIOUS DEPARTMENT ACTIONS

NORTHWEST NEW MEXICO AREA

Bureau of Indian Affairs	Lease Sale No.	Date of Sale	No. of Leases	Present Acreage
Navajo Area Office (Navajo Tribe & Allotted)	Prior to Sale 5	--	56	32,292
	Sale 5 Part I	4/27/71	44	182,355
	Part II	5/6/71		
	Sale 5A	2/15/72	2	15,365
	Sale 6	2/15/72	185	29,612
	Sale 7	8/6/75	68 (2 pending)	10,669
	Navajo-Exxon negotiated agreement	1973	1	400,000
Albuquerque Area Office (Laguna Pueblo)	Anaconda Sale #1	5/7/52	1	5,000
	Anaconda Sale #2	7/30/63	1	2,560
	Continental Sale	5/30/73	4	6,750
(Ute Mtn. Ute Reservation) (SW corner of Colorado)	Mobil Sale negotiated agreement	1975	1	162,000

TABLE I - Continued

PREVIOUS DEPARTMENT ACTIONS

NORTHWEST NEW MEXICO AREA

Geological Survey - Exploration Plans	Date	Number approved	Present Acreage
Navajo Tribal and Allotted Lands	1950-1976	200 (est.)	232,300
Laguna Lands	-1975	6	6,750
Geological Survey - Mining Plans Approved			
Navajo-Kerr-McGee Church Rock I	9/73	1	
Navajo-Kerr-McGee Church Rock II	9/76	1	
Navajo-Kerr-McGee Church Rock III	9/76	1	
Navajo-Gulf Resources-Mariano Lake	5/76	1	
Laguna-Anaconda #1	1973	1	
Laguna-Anaconda #4:			
(P-9-2) supplement	1974	1	
(P-10) supplement	1975		
Bureau of Land Management			
Uranium leases issued on acquired land	1955-1957	2	600
Prospecting permits issued on acquired land	1974	6	12,400
(FS Land)	1975	2	1,300

Present and Future Departmental Actions Related to Uranium Development

The following listing (as of July 1, 1976) depicts the anticipated actions concerning uranium development on federal and Indian lands which the Department may be requested to make within the next 5 years.

1. Requests for approval of exploration plans on Navajo lands already leased--including Reservation and allotted (GS). (See Map B.)

	Company	Location
A.	Gulf Resources	R 10 W, T 16 N.
B.	Grace Chemical	R 10 W, T 13 N; R 9 W, T 13 N; R 10 W, T 15 N; R 12 W, T 15 N; R 15 W, T 16 N (3 tracts); R 17 W, T 16 N (2 tracts).
C.	Hydro Nuclear	R 11 W, T 15 N; R 13 W, T 15 N; R 16 W, T 16 N; R 17 W, T 16 N.
D.	Homestake	R 11 W, T 15 N; R 13 W, T 15 N; R 14 W, T 16 N (3 tracts); R 17 W, T 16 N.
E.	Conoco	R 12 W, T 17 N; R 13 W, T 16 N; R 15 W, T 17 N (Reservation); R 17 W and R 18 W, T 18 N (Reservation); R 16 W, T 18 N (Reservation).

2. Mining Plans (GS). (See Map C.)

   A. Presently awaiting approval (2 mines).

      P-15 and P-17 Mines-Laguna (Anaconda).

   B. Comprehensive mining plan being prepared by Anaconda which would include the present Jackpile open-pit mine, present P-9 and P-10 underground mines and proposed P-15 and P-17 underground mines. Expected to be submitted in next 3 to 6 months (GS).

C. Mining plans expected to be submitted within next 2 years (11 mines). (See Map C.)

It is expected that most of this future development (2 years) will occur on Navajo Tribal and Allotted lands and will consist of new mine developments. However, one or two of these mines will probably be extensions of existing mine operations located on adjacent non-Indian lands.

It is expected that a portion of this future development may occur on Laguna Pueblo lands that are presently leased for exploration.

D. Mining plans expected to be submitted within 3-5 years into the future.

(1) Unnamed future potential mines (7-10). (Note: Considering the level of exploration activity on presently leased lands, this estimate could be considered conservative. This does not account for additional development that could occur if additional lands are leased.)

E. Navajo-Exxon Negotiated Lease - An environmental impact statement is presently being prepared for leasing of 400,000 acres for exploration and possible development. This analysis is based on as assumption that if a mineable ore body is found a future potential level of development could include 4 mines and 2 mills within 8-16 years into the future.

3. Potential Future Lease Sales (BIA). (See Map C.)

A. Canoncito Band Navajo Area - 62,000 acres. (Interest in leasing expressed by a number of companies.)

B. Ojo del Espiritu Santo Grant - Owned by Jemez and Zia Pueblos - 78,000 acres. (Interest expressed by a number of companies.)

C. Future lease sales of Navajo Reservation and Allotted lands. (Note: With increased price of uranium, lands previously leased and dropped now have potential for development.)

4. Requests for Right-of-Way Approvals (BIA, BLM).

Every mine development requires a number of right-of-way approvals for surface facilities such as power, water and gas lines, roads, and structures. It is estimated several hundred approvals will be requested of BIA and BLM. The majority are expected to be issued by BIA. It should be noted that due to the "checkerboard" ownership in a large portion of the uranium area mining and right-of-way approvals may involve multiple jurisdictions.

It is estimated that possibly 10-20 separate requests for applications for uranium prospecting permits will be received in the future for acquired lands. In the uranium active area, BLM administers about 150,000-170,000 acres of acquired lands.

No requests for uranium lease sales are expected since none of the acquired land has a known workable deposit of uranium.

Relationship of Federal Actions to Adjacent Private Developments

At this time, there are about 25 operating mines located on state and private lands in the Grants Uranium Belt area. There are an additional 14 mines that can be immediately identified which are either proposed or under construction (provided by New Mexico - Environmental Improvement Agency). Estimates range from double or triple this present level of development in the next 10 years. No attempt has been made to project a number for unidentified future potential mines which could develop in the next 2-5 year period on private or state lands. It should be recognized that this unidentified potential could be very significant in light of the present high level of exploration activity underway and the new areas of the state in which much of this exploration activity is taking place.

There are presently 3 mills in operation (Anaconda, Kerr-McGee, United Nuclear Homestake Partners) with an additional 4 planned or under construction (United Nuclear, Sohio, Conoco, Gulf) all to be located on private lands. A number of these existing or proposed mines and mills that can be identified are adjacent to or in close proximity to federal or Indian lands. (See Map D.) All ore mined on Indian lands is processed in the three existing mills located on private lands. In the future, all ore mined from Indian or federal lands is expected to be processed in mills located on private lands, except for that mining activity proposed for the Navajo-Exxon area. In that case, two mills are being considered in the present analysis of that development for possible construction on the Navajo Reservation.

Total Uranium Mining and Milling Activity

The total uranium development, both present and future, that can be reasonably projected at this time on Indian and private lands in the Grants Uranium Belt area includes seven mills and 68 mines. (See Map E.) However, it should be recognized that during this next 5-year period, additional mills would probably be required to process the level of production anticipated. Also, as new mines come into production some existing mines will be mined out.

Related Federal Actions

Table II depicts all of the related federal actions required for the leasing and development of a uranium mine on Indian reservations, Indian allotted, federal, state, and private lands. It should be noted that mineral ownerships and surface ownerships of lands quite often are held by different parties.

An Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit is required for each mine with a discharge which is not contained at the mine site. The EPA regulations concerning a NPDES permit vary depending on the status of the development of each mine at the time regulations were promulgated by EPA. At this time, EPA has issued seven NPDES permits for uranium mines in New Mexico and has five pending applications.

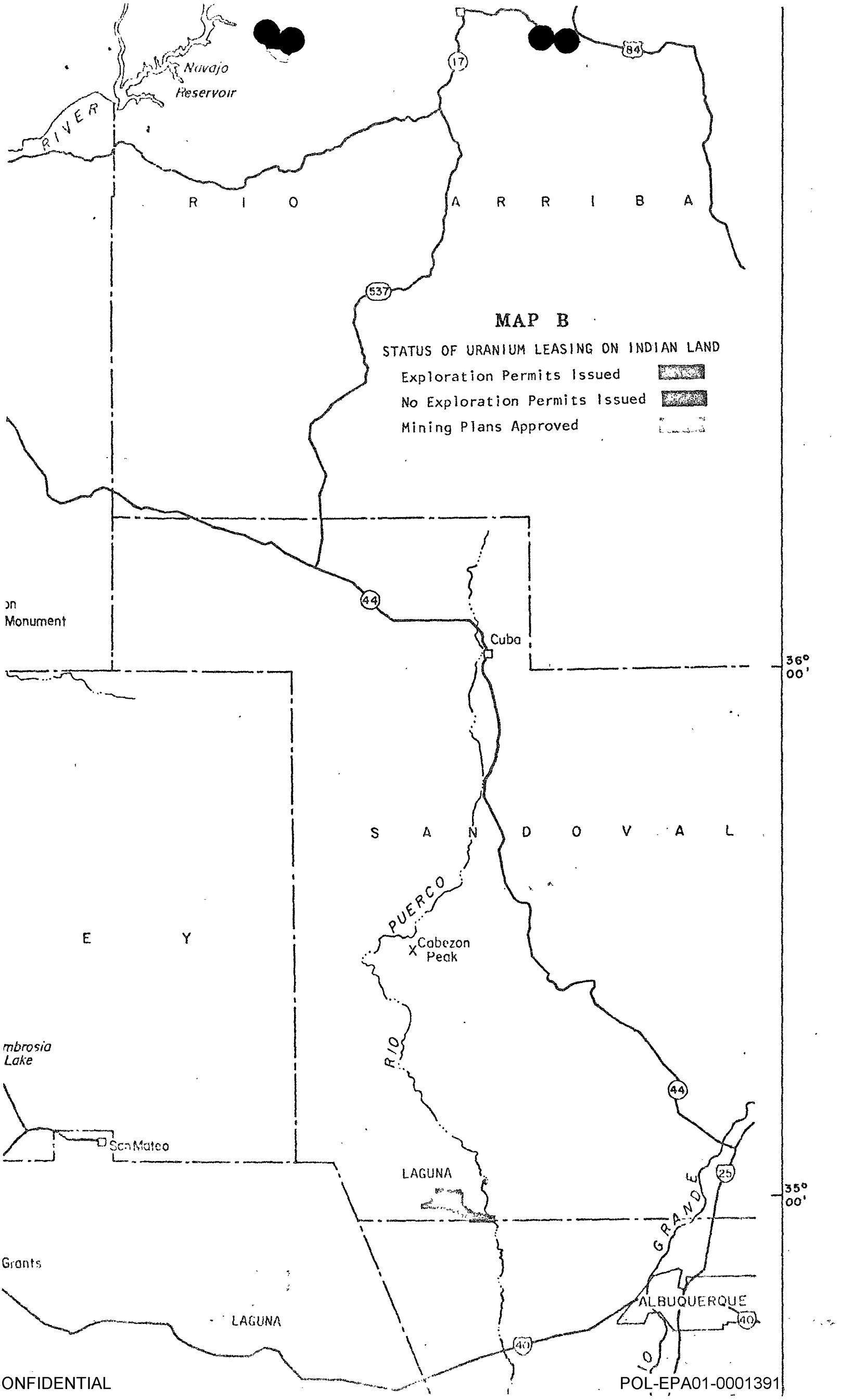
Nuclear Regulatory Commission (NRC) permit requirement for mills has been assumed by the State of New Mexico EIA.

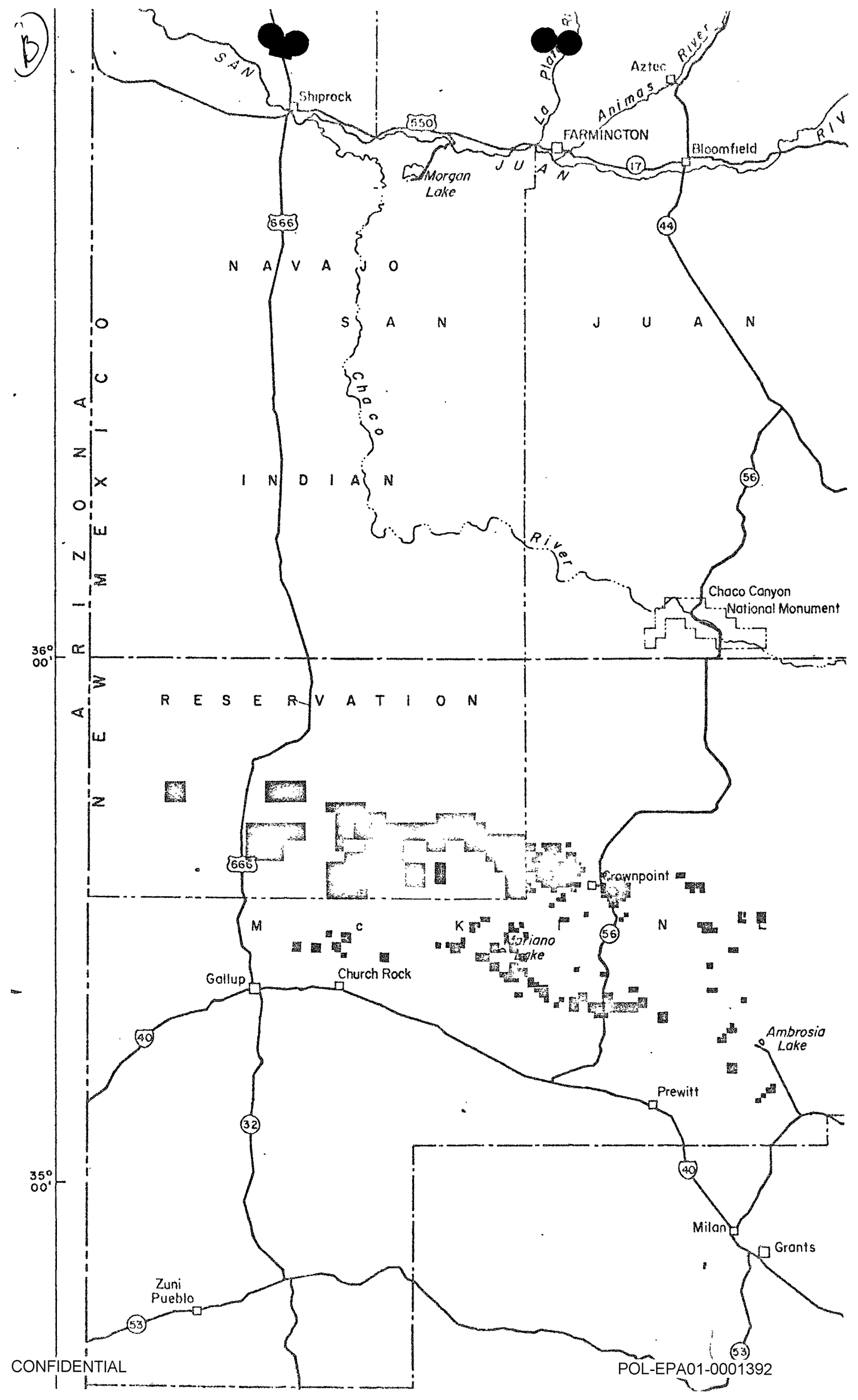
TABLE II
FEDERAL PERMITS

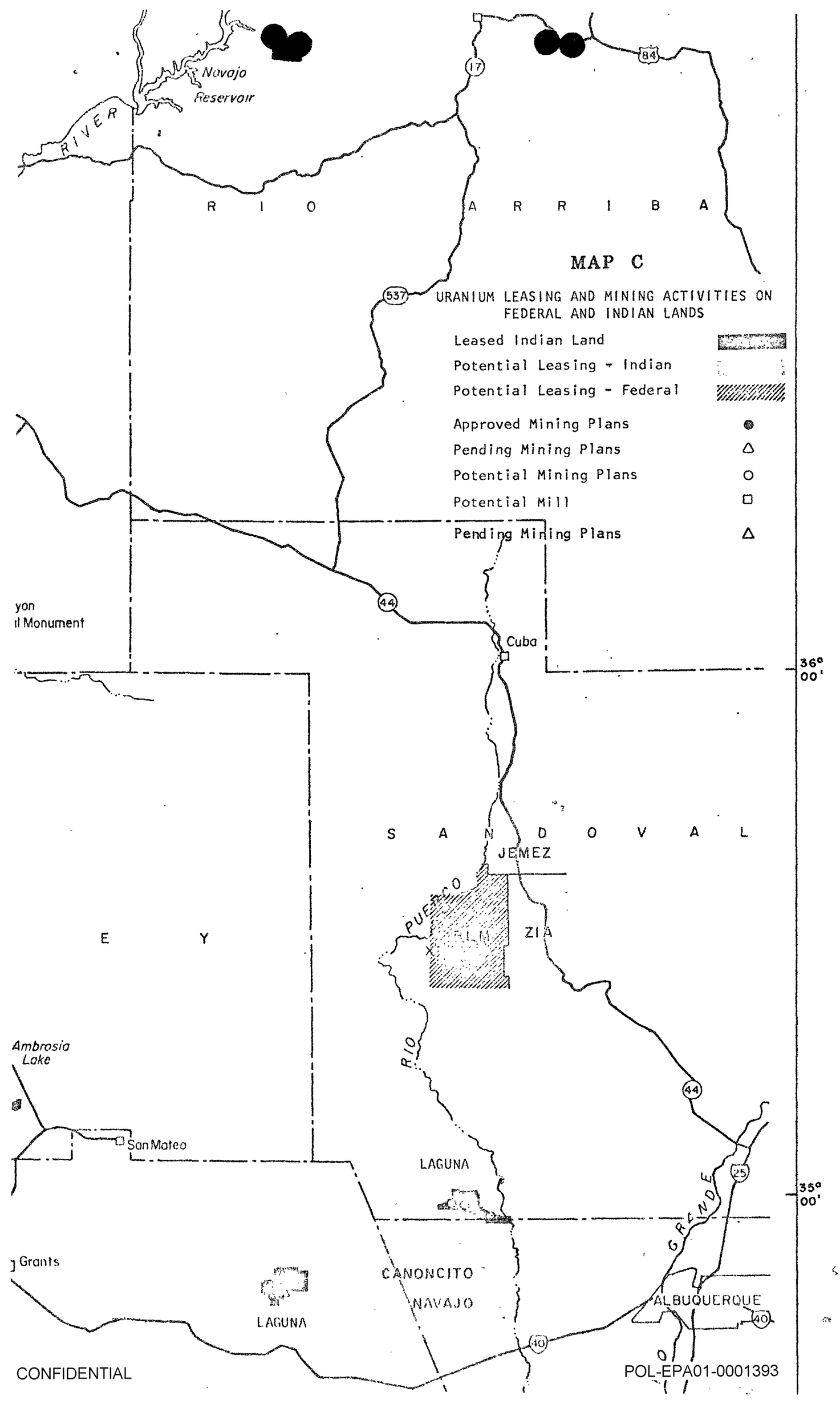
CLASSIFICATION OF LANDS

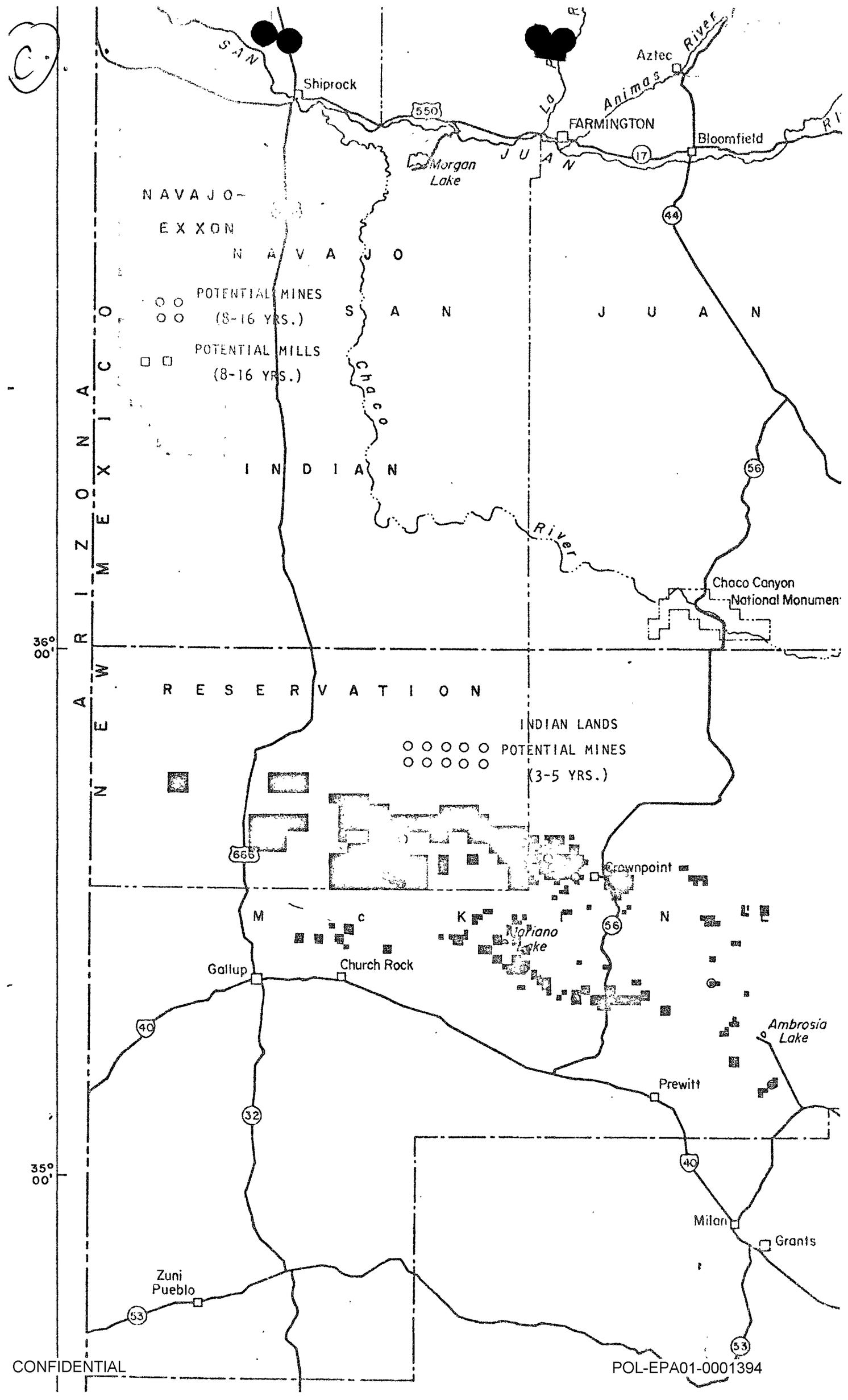
	RESERVATION	ALLOTTED	RAILROAD (Fee)	MINING CLAIMS			STATE LEASE
MINERALS (Offices with permit approvals related to mineral development)	Tribe BIA GS	Allottee BIA GS	Private	Private			(State) (Land Office)
LANDS (Offices with permit approvals related to surface developments)	Tribe BIA GS	Allottee BIA GS	Tribe Allottee BIA	Land Ownership Fee	BLM	BIA	(State) (Land Office)
Actions							
1. Tribal proposal to BIA for lease sale							
2. Lease Sale	BIA	BIA	n/a	n/a	n/a	n/a	n/a
3. Lease Issued	(Tribe)* BIA	(Allottee)* BIA	n/a	n/a	n/a	n/a	n/a
4. Exploration Plan Approval	(Tribe)* (BIA)* GS	(Allottee)* (BIA)* GS	n/a	n/a	**	(Tribe)* BIA	n/a
5. Mine and Reclamation Plan Approval	(Tribe)* (BIA)* GS	(Allottee)* (BIA)* GS	n/a	n/a	**	(Tribe)* BIA	n/a
6. NPDES Permit Approval Air Permit	(Tribe)* (BIA)* EPA	(Tribe)* (BIA)* EPA	EPA	EPA	EPA	EPA	(State-EIA) EPA
7. R-O-W Permit Approval	(Tribe)* BIA	(Allottee)* (Tribe)* BIA	(Tribe or Allottee)* BIA	-	BLM	BIA	State Land Office
Other considerations							
8. Safe Drinking Water Act PL 93-523							
9. MESA							
10. Archeological Clearance							

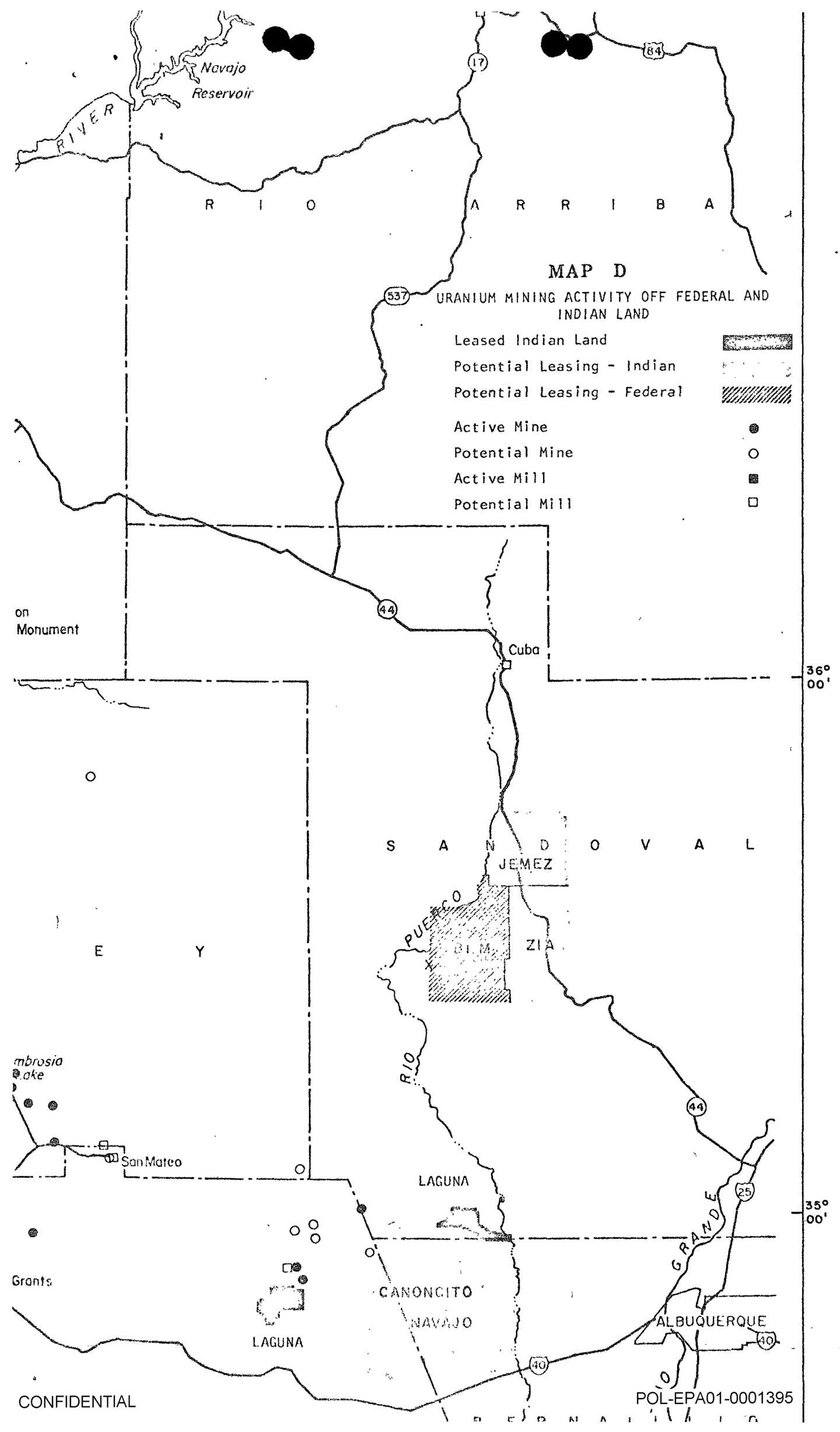
* Denotes coordination and concurrence prior to any approvals.
Note: BIA and GS will not issue any permits without approval of Tribe or Allottee.
** Coordination with BLM -- no BLM permit required.


Navajo
Reservoir
RIVER
R I O A R R I B A
17
84
537
MAP B
STATUS OF URANIUM LEASING ON INDIAN LAND
Exploration Permits Issued
No Exploration Permits Issued
Mining Plans Approved
on
Monument
44
Cuba
36°
00'
S A N D O V A L
E Y
PUERCO
Cabezon
Peak
RIO
mbrosia
Lake
San Mateo
44
LAGUNA
GRANDE
25
35°
00'
Grants
LAGUNA
ALBUQUERQUE
40
40
IO


B
SAN
Shiprock
550
La Plata R.
Aztec
Animas River
FARMINGTON
Bloomfield
RIV
17
Morgan Lake
J U A N
666
44
N A V A J O
S A N
J U A N
Chaco
I N D I A N
56
River
Chaco Canyon
National Monument
36° 00'
N E W M E X I C O
A R I Z O N A
R E S E R V A T I O N
666
Crownpoint
M
c
K
N
Mariano Lake
56
Gallup
Church Rock
40
Ambrosia Lake
Prewitt
32
40
35° 00'
Milan
Grants
Zuni Pueblo
53
53







(D)

SAN

Shiprock

550

La

Aztec

Animas

Riv

FARMINGTON

Bloomfield

17

Morgan Lake

JUAN

NAVAJO-EXXON

NAVAJO

SAN JUAN

44

NEW MEXICO

Chaco

INDIAN

56

River

Chaco Canyon National Monument

36° 00'

WESTERN RESERVATION

666

Crownpoint

MCKINLEY

Mariano Lake

Church Rock

Gallup

40

32

Ambrosia Lake

Prewitt

35° 00'

Milan

Grants

Zuni Pueblo

53

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